

# Work Order ID 46411 - 5

October 23, 2009 1:51:05 PM



SPLIT

Page 1

Item ID: D6101-005

Accept



Setup Start



Revision ID: A

Stop



Item Name: Saddle Billet

Start Date: 7/15/09 Start Qty: 300.00



Cust Item ID:

Required Date: 8/03/09 Req'd Qty: 300.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D6101

Rev A

100

0.00



PURCHASING

Purchasing

Memo

0.00

Purchasing

Issue P/O: 8393 (a)Description: Alluminum billet (b) 5.00" x 8.250" x 2.50" thick (c) Tolerance on all dimensions are +0.030"/-0.000" (d) Grain direction along 5.00" length (e) Material: 7075-T7351 (QQ-A-250/12) (f)Material certification required

C209/10/23

110

Reccive & Inspect for Damage & Mat'l Certs

0.00



Packaging

Memo

0.00

Packaging

Ensure material certification is attached

Per 4/6 30

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Work Order ID 46411

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Page 2

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Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

120

QC6- Inspect dimensions to drawing

0.00



QC

Memo

0.00

*OK 09/11/09*

*35*

Quality Control

Ensure Material certification comply to Dwg D6101

130

Identify as per dwg & Stock Location: *MAT*

0.00



Packaging

Memo

0.00

*OK 09/11/09*

*35*

Packaging

140

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

*09/11/10*

*MF*

*09-11-10*

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

## Picklist Print

October 23, 2009 1:51:04 PM

**Work Order ID:** 46411

**Parent Item:** D6101-005RevA






**Parent Item Name:** Saddle Billet

**Comments:**

**Start Date:** 7/15/09**Required Date:** 8/03/09

**Start Qty: 300.00**

**Required Qty: 300.00**

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D6101-005PRevA		Purchased	No			110	Each	0.0000	117.0000			
												
7075-T7351 8.25X5.0X2.5												

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

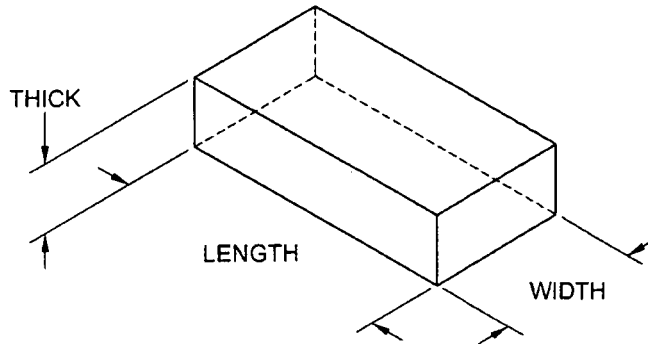
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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NOTE: Date & initial all entries

# SPECIFICATION CONTROL DRAWING



PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

**B** ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length

**RELEASED**  
09/07/15/W

B	ADDED D6101-015/-017, ADD ASTM B209	RF	09.04.23
A	NEW ISSUE	CP	01.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	CP	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D6101	SHEET 1 OF 1
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	SADDLE BILLET, 7075	NTS
DATE	09.04.23	COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

*CP*  
*02/11/04*

46411

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



**Castle Metals®**

A. M. Castle &amp; Co.

**PACKING SLIP**

Page 1 of 1

Pack Slip No:6220298

<b>Ship From:</b> Castle Metals MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		<b>Sold To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		<b>Ship To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		<b>Deliver To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
<b>Date Shipped</b> 05-NOV-09	<b>F.O.B.</b> ORIGIN	<b>Freight Terms</b> Prepaid		<b>Carrier</b> MANITOULIN	<b>BOL No</b> 114842-2	<b>Delivery No</b> 6220298	

<b>Shipment Details</b>	<b>Final Destination Branch - MON</b>
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<b>Order No</b> 369846	<b>Line No</b> 1	<b>Item No</b> 6879.MO	<b>Description</b> 2.5000.PL.7075.T7351.ALUMINUM.48.5000.144.5000 CUT 2SIDED TO 8.25 IN ( + .0310/- .0000 IN (GRAIN TO RUN ALONG 5")) X 5 IN ( + .0310/- .0000 IN (GRAIN TO RUN ALONG 5")) - ALUMINUM PLATE SAW			
<b>Purchase Order No</b> 8393		<b>Part Number</b>		<b>Ordered Qty</b> 35 PCS	<b>Invoice Qty</b> 35 PCS	<b>Backorder Qty</b>
<b>Details</b>						
<b>Mill</b>	<b>Heat Number</b> 422799A7	<b>Mech Id</b>	<b>PCS</b> 35	<b>Width (IN)</b>	<b>Length (IN)</b>	<b>Shipped Qty (LBS)</b> 364.61

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.	
We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.	
This material has been received and inspected by:	Date:

*ant 09/11/09*

**KAISER  
ALUMINUM****CERTIFIED TEST REPORT**Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586Serial Number  
4128061

\* Lot: 422799A7 Cast 161 Drop 29 Ingot 2

(ASTM E8/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	70.2 : 72.5 (484 : 500)	58.1 : 61.4 (401 : 423)	9.8 : 10.0

(ASTM E1004)

Conductivity %IACS :	40.5 Min	40.9 Max
(MS/M) :	23.5 Min	23.7 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.09	0.20	1.5	0.02	2.7	0.19	5.7	0.02	0.01	0.01	TOT 0.03

**ALLOY LIMITS**

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075 MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

**TEST NOTES**

Metal represented by this test report was immersion  
ultrasonically tested from one side and meets the Class A  
and Class B requirements of all specifications referenced  
on this test report.

CASTLE METALS - KENT	
DATE REC'D <u>5-2-08</u>	CUST. _____
REC'D FROM <u>Kaiser</u>	CUST. P.O. _____
APPROVED BY <u>AM</u>	AMC S/O _____
TR # <u>422799A7/422799A7</u>	
WE HEREBY CERTIFY THAT THESE ARE CORRECT COPIES OF REPORTS NOW ON FILE AT A.M. CASTLE & CO. BY: <u>Jac. 6879</u>	

*Only*  
*09/1/09*

**CERTIFICATION**

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE U.S.A OR CANADA AND MANUFACTURED IN THE U.S.A. AND HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT-TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS ARE ON FILE, SUBJECT TO EXAMINATION. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULANT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO 9001:2000 CERTIFIED

BILL POYNOR, LABORATORIES SUPERVISOR

*Bill Poy*

SHIP TO:  
CASTLE METALS  
C/O CUTTER PRECISION METALS  
1208 NO. 4TH AVE  
KENT, WA 98032

**KAISER  
ALUMINUM**

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

## CERTIFIED TEST REPORT

Serial Number  
4128061

SOLD TO:  
AM CASTLE & CO  
3400 NO. WOLF ROAD  
FRANKLIN PARK, IL 60131

CUSTOMER PO NUMBER: 45-24870		WORK PACKAGE:	CUSTOMER PART NUMBER: 6879 A97075-60		SHIP RUN/LOAD ID: 101272/3	GOV'T CONTRACT NUMBER:
KAISER ORDER NO: 1066098	LINE ITEM: 1	SHIP DATE: 28-APR-2008	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: MILL FINISH PLATE
WEIGHT SHIPPED: 7214 LB	QUANTITY: 4 PCS EST.	B/L NUMBER: 2017533	GAUGE: 2.5000 IN	WIDTH: 48.500 IN	LENGTH: 144.500 IN	

### Certified Specifications

AMS 4078/RevG  
ASTM B 209/Rev07  
BSS 7055/RevA  
DPS 4.713/RevAH  
GSS16100/RevG

AMS-QQ-A-250/12  
ASTM B 594/Rev06  
CMMP 025/RevR  
EAC MS1011/RevE  
MMS 159/RevN

AMS-STD-2154  
BAC 5439/RevH  
CSTI 006/RevC  
GAMPS 9101/RevB  
PS 21211/RevK

Test Code: 4297

### Test Results

Lot: 422797A1 Cast 161 Drop 21 Ingot 2

(ASTM E8/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	70.8 : 71.0 (488 : 490)	60.2 : 60.6 (415 : 418)	9.7 : 10.4

(ASTM E1004)

Conductivity %IACS :	41.4 Min	41.6 Max
(MS/M) :	24.0 Min	24.1 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.10	0.22	1.5	0.02	2.4	0.10	5.6	0.02	0.01	0.01	TOT 0.03